

**What is claimed is:**

1. Method for supporting a web (1) during the post-processing of a web of paper or board, the method comprising the steps of:

5 - passing the web from a preceding section to at least one next downstream located web treatment section (4) wherein to at least one side of the web (1) is applied a treatment agent causing wetting of said side of said web, and

10 - passing the web (1) exiting said web treatment section to at least one dryer apparatus (8),

15 characterized in that

20 - supporting the web (1) contactingly in a continuous and unbroken manner at least from said web treatment section (4) to said dryer (8).

25 2. Method according to claim 1, characterized by comprising the steps of

- drying the web (1) with at least one drying apparatus (3) prior to passing the web to said web treatment section (4), and

30 - contactingly supporting the web in a continuous and unbroken manner at least from said drying apparatus (3) preceding said web treatment section (4) to said dryer apparatus (8) located downstream next to said web treatment section.

35 3. Method according to claim 2, characterized in that the web (1) is supported by means of a dryer wire (2) of a paper- or board making machine.

4. Method according to claim 2 or 3, characterized in that the web is passed supported by a continuous support element (2) at least from a drying apparatus (3) preceding said web treatment section (4) to the drying apparatus (8) located downstream next to said web treatment section.
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5. Method according to claim 2, characterized in that the web (1) is passed to at least one downstream located web treatment section (4) supported by the continuous support element of the upstream preceding web treatment section.
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15. Method according to claim 1, characterized in that the web (1) is passed supportedly and only partially dried from an upstream preceding web treatment section to the next downstream located web treatment section.
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20. Method according to claim 4, characterized in that the web (1) is supported by one and the same support element (2) through said web treatment section (4) and during the entire web travel through the next downstream located drying apparatus (8).
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30. Method according to claim 1, characterized in that the web (1) is supportedly passed from the upstream preceding, web-wetting treatment section to the next downstream located web treatment section and the web is dried so that at least a portion of the moisture content of the web is evaporated.
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35. Method according to claim 6, characterized in that the web (1) is passed to said web treatment section in a condition optimized with respect to the requirements of the paper grade being manufactured, the

investment costs, the frequency of web breakages, the overall energy consumption of the process, desired paper quality or the like target variable.

5 10. Method according to claim 1, characterized  
in that the web is supported by means of a  
support element against a member of the web treatment  
apparatus, advantageously a film-transfer roll or blade  
coater, that serves to apply a web-wetting agent to the  
10 surface of the web.

11. Method according to claim 1, characterized  
in that the web is dried by a microwave dryer,  
air-impingement dryer, contacting dryer, suction dryer or  
15 the like dryer means, wherein the web is supported by a  
member of a material suitable for resisting the impact of  
said drying apparatus.

12. Method according to claim 1 or 11, characterized  
20 in that the web is supported by means of a  
belt or surfaced belt or fabric that is impermeable to  
moisture.

13. Method according to claim 1 or 11, characterized  
25 in that the web is supported by means of a  
wire, fabric, porous felt or porous or perforated belt  
that is permeable or absorbent to a liquid or gaseous  
medium.

30 14. Method according to claim 1, characterized  
in that at least one surface of the web is  
coated with a coating which is transferred with the help  
of a movable member passing through an application nip or  
area.

35 15. Method according to claim 14, characterized  
in that said application nip or area is formed

by a loading element such as a roll, belt or sliding shoe.

16. Method according to claim 1, characterized in that the web is supported in the first web treatment section by air-jet support means, after which the web is passed onto a contacting support element for spreading the web, subjecting the same to measurement of process qualities or supportingly passing the web to subsequent web treatment sections.

17. Method according to claim 1, characterized in that the web is supported by a plurality of successive support elements and the web (1) is transferred supportedly or guided by web guidance means (10) from one support element (2) to the next support element (11) in the succession.

18. Method according to claim 1 or 17, characterized in that the web is passed from one support element to the next via web spreading or tension-controlling means.

19. Method according to claim 1 or 15, characterized in that the web (1) is pressed against the surface of at least one roll serving to form a nip and apply a coating.

20. Method according to claim 1 or 15, characterized in that the web (1) is pressed against the surface of at least one sliding shoe element serving to form a nip and allowing a coat-applying planar element to slide thereon.

21. Method according to claim 1, characterized in that a first side of the web is supported by a movable continuous support element, while a coating is

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applied to the second side of the web using, e.g., a spray-coating method, a jet-coating method, a blade/rod coater or an applicator roll coater.

5 22. Method according to claim 1 or 22, characterized in that the web is adhered to the support element by means of air impingement or suction.

10 23. Method according to claim 1, 2, 4, 5, 6 or 8, characterized by comprising the steps of

15 - passing the web to a predryer cylinder group comprising at least one dryer cylinder and pressing the web against the cylinder by means of a single-wire support arrangement,

20 - supposedly passing the web to a treatment of the first side of the web, said web treatment comprising at least the application of a coating and the spreading/tensioning of the web, and

- passing the web to a like treatment of its second side and then by means of a single-wire support arrangement to a postdryer group.

25 24. Method according to claim 1, characterized in that the web is supported by a succession of support elements (2, 22, 24, 25, 11) whose surface qualities are selected so that the adherence of the web at the cross-over point of said support elements is stronger to the downstream next, receiving support element than to the upstream preceding, delivering support element.

30 35 25. Method according to claim 24, characterized in that the web is supported by elements in which the surface of the delivering support element is

more hydrophilic than the surface of the receiving support element.

26. Method according to claim 24, characterized in that the web is supported by elements in which the surface of the delivering support element is softer than the surface of the receiving support element.

27. Method according to claim 24, characterized in that the web is supported by elements in which the surface of the delivering support element (24) has a coarser texture than the surface of the receiving support element (25).

28. Method according to claim 24, 25, 26 or 27, in which method the web treatment device is a film-transfer coater, characterized by comprising the steps of

- passing the web (1) transferred on the support wire (2) of the dryer to a first support element (22),

- passing the web (1) from said first support element (22) onto the surface of a first film-transfer applicator roll (24),

- passing the web supported by the outer circumferential surface of said first film-transfer applicator roll (24) onto a second film-transfer applicator roll (25), and

- passing the web supported by the outer circumferential surface of said second film-transfer applicator roll (25) onto a next downstream located contacting support element (11).

29. Method according to claim 1 or 24, characterized in that

terized in that the web is supported by means of a movable element that can be, e.g., a metal, polymer, glass fiber or carbon fiber belt, wire, felt or web or band.

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30. Method according to claim 1, 15 or 24, characterized in that the web is supported in the film-transfer coater by means of a support belt that serves to transfer a web treatment agent to the surface of the web.

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31. Assembly for supportedly guiding a web (1) during the postprocessing of a web of paper or board, said assembly comprising

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- at least one web treatment device (4),

- at least one device (3) preceding said web treatment device,

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- elements (2) for passing the web (1) from said preceding device (3) to at least one next downstream located web treatment device (4) suited for applying to at least one surface of the web (1) a treatment agent that wets the web, and

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- elements for passing the web (1) to at least one dryer (8) following said web treatment device,

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characterized by

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- at least one support element (2) for passing the web (1) in a continuous and unbroken manner at least from said web treatment device to said next downstream located dryer.

32. Assembly according to claim 31, characterized -

i z e d b y

- at least one dryer (3) for drying the web prior to passing the web to said web treatment device (4), and

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- a support element for contactingly supporting the web (1) in a continuous and unbroken manner at least from said dryer (3) preceding said web treatment device (4) to said dryer (8) located downstream next to said web treatment device.

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33. Assembly according to claim 31, c h a r a c t e r - i z e d in that said element for passing the web (1) is a dryer wire (2) of a paper or boardmaking machine.

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34. Assembly according to claim 31, c h a r a c t e r - i z e d by a single continuous support element (2) being used for passing the web in a supported manner at least from said dryer (3) preceding said web treatment device (4) to said dryer (8) located downstream next to said web treatment device.

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35. Assembly according to claim 31, c h a r a c t e r - i z e d by a single continuous support element being used for passing the web (1) to at least one next downstream web treatment device from an upstream preceding web treatment device.

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36. Assembly according to claim 35, c h a r a c t e r - i z e d by one and the same support element (2) being used for supporting the web (1) through said web treatment device (4) and during the entire web travel through the next downstream located dryer (8).

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37. Assembly according to claim 31, c h a r a c t e r - i z e d by having at least one support element adapted to support the web (1) so as press the web against a

member of the web treatment section, advantageously a film-transfer roll or blade coater, that serves to apply a web-wetting agent to the surface of the web.

5       38. Assembly according to claim 31, characterized by at least one microwave dryer, air-impingement dryer, contacting dryer, suction dryer or the like dryer apparatus, wherein the web is supported by a member of a material suitable for resisting the impact of said dryer.

10      39. Assembly according to claim 31 or 38, characterized in that said support element is a belt or surfaced belt/fabric that is impermeable to moisture.

15      40. Assembly according to claim 31 or 38, characterized in that said support member is a fabric, porous felt or porous/perforated belt that is permeable or absorbent to a liquid or gaseous medium.

20      41. Assembly according to claim 31, characterized by at least one movable element capable of defining at least one application nip or area in which nip or area at least one surface of the web is coated with a coating transferred with the help of said movable member passing through said application nip or area.

25      42. Assembly according to claim 41, characterized by having said application nip or area defined with the help of a loading element such as a roll, belt or sliding shoe.

30      43. Assembly according to claim 31, characterized by a plurality of successive support elements serving to support the web and to transfer the web (1) supportedly or guided by web guidance means (10) from one support element (2) to the next support element (11) in the succession.

44. Assembly according to claim 31, characterized by means for supportedly pressing a first side of the web against a movable continuous support element and means for applying a coating to the second side of the web using, e.g., a spray-coating method, a jet-coating method, a blade/rod coater or an applicator roll coater.
45. Assembly according to claim 31 or 44, characterized by air-impingement or suction means for adhering the web to the support element.
46. Assembly according to claim 31, characterized in that the surface of the support element is patterned with a desired surface texture serving to make a desired surface or base coating pattern on the web side to be treated.
47. Assembly according to claim 31, characterized by a succession of support elements (2, 22, 24, 25, 11) serving to support the web, said support elements having their surface qualities so selected as to make the adherence of the web at the cross-over point of said support elements stronger to the downstream next, receiving support element than to the upstream preceding, delivering support element.
48. Assembly according to claim 47, characterized in that the surface of the delivering element is more hydrophilic than the surface of the receiving element.
49. Assembly according to claim 47, characterized in that the surface of the delivering element (24) has a coarser texture than that of the surface of the receiving element (25).

50. Assembly according to claim 47, characterized in that the surface of the delivering element (24) is softer than the surface of the receiving element  
5 (25).

51. Assembly according to claim 47, 48 or 49, in which system said web treatment device is a film-transfer coater, characterized by

10 - a support wire (2) of the dryer serving to pass the web (1) to a first support element (22) on which the web (1) is transferred onto the surface of a first film-transfer applicator roll (24),

15 - a second film-transfer applicator roll (25) serving to receive the web which has been transferred and supported by the surface of the first film-transfer applicator roll (24), and

20 - a next downstream located, contacting support element (11) serving to receive the web (1) which has been transferred and supported by the surface of the second film-transfer applicator roll (25).

25 52. Assembly according to claim 30 or 47, characterized in that the web is supported by means of a movable element that can be, e.g., a metal, polymer, glass fiber or carbon fiber belt, wire, felt or web or  
30 band.

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